SYSTEM AND METHOD OF DISHARMONIC FREQUENCY MULTIPLEXING

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ABSTRACT OF THE DISCLOSURE

A multiplexing system and method for conveying simultaneously a multiplicity of communication channels over a single transmission medium. Multiplexing is effected by transforming a digital bit stream of each respective incoming channel into a corresponding prime frequency information stream and transmitting all of the prime frequency information streams over the single transmission medium. Digital bit streams carried on each incoming channel entering the system are in the form of binary "on" and "off" bits. These digital bits are converted into a corresponding information stream at a prime frequency component. Each prime frequency information stream is rendered distinctive and non-interfering with other prime frequency information streams during simultaneous transmission over the common medium due to the unique and heretofore unexploited mathematical properties of prime numbers. Expanded bandwidth is accomplished by grouping the prime frequency information streams into "chords" of disharmonic frequencies, and then transmitting the chord, composed of several discordant prime frequency information streams, over the single transmission medium.